

REMARKS

Claims 1-3, 5-7 and 9-70 are pending in the application. Claims 1-3, 5-7 and 9-70 have been rejected.

Amendments

Claims 1, 34 and 50 have been amended to clarify that the at least one pH-lowering agent lowers the pH of at least a portion of said meat below its pH level at grading. This amendment is supported by the specification at paragraph [008], specifically at page 3, lines 22-23. Likewise, claims 34 and 50 have been amended to clarify that the at least one pH-lowering agent may alternatively lighten the color of the meat from the grading color. This amendment is supported by the specification at paragraph [001] and [040].

Additionally, Claims 1, 34 and 50 have been amended to recite that the meat is contacted with the at least one pH-lowering agent after onset of rigor mortis. This amendment is supported by the specification at paragraph [021].

Claims 11-13 have been amended to recite that the least one pH-lowering agent is sufficient to lower the pH of the meat below its pH level at grading, in order to strictly to conform to nomenclature regarding measurement of pH at time of grading as compared to measurement after grading. This amendment is supported by the specification at paragraph [008], specifically at page 3, lines 22-23.

Claim 19 has been amended to depend from claim 1, rather than cancelled claim 18.

Claims 17, 18 and 68 have been cancelled without prejudice to expedite prosecution and simplify issues.

It is respectfully submitted that this amendment does not raise new matter, and further does not raise issues that have not been considered in the present prosecution. Entry of this amendment is therefore earnestly solicited.

Discussion of Rejections

Claims 1-3, 5, 6, 9-25, 27, 34-36, 40, 41, 43, 50-52, 54, 56, 57 and 67-70 have been rejected under 35 U.S.C. 102(b) as being clearly anticipated by Calkins et al. (U.S. 2002/0054941, pages 1-5 and Ex. 5) as set forth in paragraph no. 6, Paper No. 20080325.

The present claims are drawn to a meat product, comprising a meat obtained from a dark-cutting carcass having a grading pH; and, an amount of at least one pH-lowering agent sufficient to lower the pH of at least a portion of said meat. The claims additionally are drawn to a method for treating meat from a dark-cutting carcass.

As noted previously, a “dark-cutting carcass” is defined at the point in the meat preparation process where USDA quality and yield grading occurs, i.e. only after the carcass has gone into rigor mortis. In order to provide further emphasis of this distinction, the claims have been amended to expressly state that the meat is contacted with the at least one pH-lowering agent after onset of rigor mortis.

In contrast, Calkins et al. describe treatment of a pre-rigor meat to enhance tenderness of the meat, and this disclosure has nothing to do with whether a meat is from a dark-cutting carcass. The treatment composition of Calkins et al. is applied before rigor mortis (prior to the time of determining the grading pH), and therefore cannot lower the grading pH of at least a portion of the meat.

Further, it is respectfully submitted that this difference in timing of treatment of the meat in Calkins et al. results in generation of a product that is actually different from the product presently claimed. Calkins et al. disclose at paragraph [0009] that it is their strategy “to increase pH while preserving desirable color” (emphasis added). The timing of the administration of the acid in Calkins et al. was stated to reduce the pH decline normally observed in meat. This provides a final product meat that has a higher final pH as compared to a control wherein acid was not administered. See paragraphs [0063] and [0069]. The result was stated to provide a more tender muscle, “without detriment to lean color.” See paragraph [0069]. In fact, the experimental results reported in Calkins et al. show that two of the three muscles were “slightly, but significantly darker than controls.” Paragraph [0131], emphasis added. The observed color effect is thus the opposite of what occurs in the present method, which results in a final product that is lighter in color than

controls. Therefore the presently claimed final product is surprisingly different from that disclosed in Calkins et al.

It is respectfully submitted that the claims are not anticipated by the Calkins et al. disclosure.

Claims 37-39, 42, 53, 55 and 58-60 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Calkins et al as set forth in paragraph no. 7, Paper No. 20080325.

The rejected claims are drawn to a method for treating meat from a dark-cutting carcass by contacting the meat after grading with at least one pH-lowering agent sufficient to lower the pH below the pH level of the meat at grading, and thereby to lighten the color of at least a portion of the meat to a lighter color than the color of the meat at the time it appears when graded (i.e. the grading color). Claims 37 and 53 identify specific pHs of the meat at the time of grading ("grading pH," i.e. after onset of rigor mortis and prior to treatment). Present Claims 37 and 53 do not describe the pH of the meat at the end of the process, but rather identify the starting point of the pH of the dark-cutting meat, prior to contacting the meat with at least one pH-lowering agent. See paragraph [008] of the present specification. By the end of the presently claimed process, the pH of the meat is lowered and the meat is lighter in color than it had appeared at the time of grading.

Additionally, as noted above, the claims have been amended to expressly state that the meat is contacted with the at least one pH-lowering agent after onset of rigor mortis. The present claims clearly distinguish over the method as disclosed in Calkins et al, which describe treatment of a pre-rigor meat to enhance tenderness of the meat. In order to achieve this stated objective, the timing of the treatment according to Calkins, et al. is essential. The treatment must be made pre-rigor (see paragraph [0047]). The skilled artisan would have had no motivation to change the timing of this treatment in view of the teachings of Calkins et al., because to make such a change would frustrate the primary objective of the method as taught therein, which was to achieve a more tender meat by reducing the reduction of pH through administration of acidic solutions pre-rigor.

Claims 7, 26, 28, 33, 48 and 49 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Calkins et al in view of Komarik (3,526,521, Abstract and cols. 2-3) as set forth in paragraph no. 8, Paper No. 20080325.

Komarik is cited for its teaching regarding the use of GDL and sodium erythorbate in the process of curing whole meats, and it is asserted that the skilled artisan would have used these chemicals in the treatment method of Calkins.

It is respectfully submitted that the combination of these references does not render the present claims obvious. Specifically, the rejected claims are drawn to a meat product, comprising a meat obtained from a dark-cutting carcass having a grading pH; and, an amount of at least one pH-lowering agent sufficient to lower the pH of at least a portion of said meat, and also to a method for treating meat from a dark-cutting carcass by contacting the meat with at least one pH-lowering agent sufficient to lower the pH, lighten the color from the grading color, or both of at least a portion of said meat.

As noted above, the object of Calkins is to treat pre-rigor meat to enhance tenderness of the meat, and Calkins does not contemplate treatment of post-rigor or dark dark-cutting carcasses at all. Thus, even if combined, the references would have taught the skilled artisan a product and a method whereby pre-rigor treatment is required to achieve the desired object of the primary reference. The present post-rigor treatment therefore cannot be said to be obvious in view of these references in combination.

Claims 29-32, 45-47 and 62-66 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Calkins et al in view of Nakao et al (3,666,488, cols. 2-3) as set forth in paragraph no. 9, Paper No. 20080325).

Nakao is cited for its teaching regarding use of phosphate buffers.

More specifically, Nakao teaches stabilizing the meat color developed in meat products by the treatment with nitrates or nitrites by contacting the meat with a weakly acid aqueous solution having a specified pH and acid content. See claim 1. The use of phosphate buffer systems is mentioned at the top of column 3. Nakao therefore provides discussion about stabilizing an existing color, but provides no teaching or suggestion about treating a dark-cutting meat to lighten the color of the meat after it has been graded.

Even if the chemical selections of Nakao were used in the process of Calkins as asserted in the Office Action, such a combination would not result in a product or method as presently claimed. As noted above, the object of Calkins is to treat pre-rigor meat to enhance tenderness of the meat, and Calkins does not contemplate treatment of post-rigor or dark dark-cutting carcasses at all. Thus, even if combined, the references would have taught the skilled artisan a product and a method whereby pre-rigor treatment is required to achieve the desired object of the primary reference. The present post-rigor treatment therefore cannot be said to be obvious in view of these references in combination.

Claims 44 and 61 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Calkins et al in view of Tracy et al (4,576,825, cols. 2-3) or Holdren (5,736,186, col. 6) as set forth in paper no. 10, Paper No. 20080325.

Tracy and Holdren are cited in the above rejections for their teaching of use of encapsulated materials in curing meats. It is noted that these references provide no teaching or suggestion about treating a dark-cutting meat to lighten the color of the meat after it has been graded.

Even if the chemical selections of Tracy and/or Holdren were used in the process of Calkins as asserted in the Office Action, such a combination would not result in a product or method as presently claimed. As noted above, the object of Calkins is to treat pre-rigor meat to enhance tenderness of the meat, and Calkins does not contemplate treatment of post-rigor or dark dark-cutting carcasses at all. Thus, even if combined, the references would have taught the skilled artisan a product and a method whereby pre-rigor treatment is required to achieve the desired object of the primary reference. The present post-rigor treatment therefore cannot be said to be obvious in view of these references in combination

It is noted that the rejection of Claims 62-66 under 35 U.S.C. 103(a) as being unpatentable over Calkins et al. in view of Komarik, and further in view of Nakao et al. has not been repeated in the outstanding Final Rejection. The apparent withdrawal of this rejection is gratefully acknowledged.

However, in the event that this omission was by oversight, it is respectfully submitted that these references even in combination would not result in a product or method as presently claimed. As noted above, the object of Calkins is to treat pre-rigor meat to enhance tenderness of the meat, and Calkins does not contemplate treatment of post-rigor or dark dark-cutting carcasses at all. Thus, even if combined, the references would have taught the skilled artisan a product and a method whereby pre-rigor treatment is required to achieve the desired object of the primary reference. The present post-rigor treatment therefore cannot be said to be obvious in view of these references in combination.

Conclusion

In view of the above remarks and amendments, it is respectfully submitted that the foregoing is fully responsive to the outstanding Office Action. Early favorable consideration of the above application is earnestly solicited. In the event that a phone conference between the Examiner and the Applicant's undersigned attorney would help resolve any issues in the application, the Examiner is invited to contact said attorney at (651) 275-9811.

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Respectfully Submitted,

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